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Magnetism and structural phase transitions in LiTmF4 powders

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Abstract

The field (0-5.5 T) and temperature (2-300 K) dependences of the magnetization of LiTmF4 powders with particle sizes of 1 μm and 56-400 μm are investigated experimentally and theoretically. It is concluded that a transition layer exists between the thulium ions in the bulk and the ions at the surface. Two magnetic-field-induced structural phase transitions are observed at low temperatures, and the temperature dependence of the critical magnetic fields is established. © 1997 American Institute of Physics.

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